

Emollients (Moisturizers, lubricants, vanishing creams)

Emollients are agents that soften and smooth the skin.

Components of emollients

- Lipids: that may be animal fats (e.g. lanoline), vegetable oils (e.g. olive oil & cotton seed oil), mineral oils (e.g. light paraffin oil), synthetic oils (e.g. silicone oils).
- Water and preservatives: e.g. parabens, imidazolidinyl urea.
- Emulsifying agents: e.g. cetearyl alcohol.
- Humectants: substances that attract water into the str. corneum after diffusing into this structure, e.g. glycerine, urea & pyrrolidone carboxylic a., sorbitol, propylene glycol & butylene glycol. Glycerine "plasticizes" the str. corneum.

22. Therapeutics - I) Topical therapy

- Natural moisturizing factors (NMFs): a group of basic amino acids & pyrrolidine carboxylic a. (PCA) that arise as the breakdown products of keratohyaline granules are carried up into the st. corneum where they may help in water retention.
- Coloring and fragrance.
- Sunscreens.

Mechanism

- Binding additional water to SC.
- Prevents transition of IC lipid within SC from liquid to gel phase → improve barrier function.
- Glycerine enhances the activity of proteases that degrade desmosomes → promotes normal desquamation.

Types of emollient preparations:

1. Cream / emulsion

- Oil-in-water emulsion "vanishing cream"
- Water-in-oil emulsion
- Bath oils (or shower gels)

2. Ointment / fatty ointment: water-free acids.

Actions

1. **Moisturizing:** emollients provide an impervious lipid barrier which prevents evaporation of water from the skin surface & encourages its accumulation within the horny layer from the layers below. Some emollients contain a substance called "Humectants" that penetrates the horny layer & attracts water into the st. corneum.
2. **Anti-inflammatory effects.**
3. **Anti-mitotic effects.**

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2. **Anti-inflammatory effects.**
3. **Anti-mitotic effects** on the epidermis.
4. **Anti-pruritic effects:** through the antiinflammatory action & the cooling effect of the evaporation of water from the skin surface after using water-containing emollient emulsions.
5. **Others:** emollients may be used as vehicles for the added agents, e.g. antimicrobial agents.

Indications

1. **Ichthyoses:** a minimum of 3 times/day with one of the times being after getting out of the bath.
2. **Eczematous disorders:**
 - All types of eczema are dry & scaly at the site of eczema, but atopic dermatitis is characterized by generalized dryness & scaling of the skin surface.
 - In chronic hand eczema, scaling & fissuring are common & cause serious disability. The abnormal keratinization → abnormal inelastic horny layer → easily fractured when stretched.
 - In this situation, hand cream emollients provide a useful therapeutic approach.

22. Therapeutics

- Eczema craquelée or asteatotic eczema: especially seen in elderly over the shins.
- Discoid eczema.

Lifestyle rules for patients with dry scaling &/or itchy skin

1. Bathe in lukewarm not too cold or too hot.
2. Pat dry after bathing - avoid vigorous toweling.
3. Use bath oil & emollient cleanser - avoid bath salts or ordinary soap.
4. Humidify air at home - especially if central heating or air-conditioning is used.
5. Wear cotton, silk, etc. - avoid wool or denim type materials.

3. Psoriasis

- Localized lesions on the knee and elbows.
- In combination with Anthralin or tar to reduce their irritant effects.
- Before PUVA to enhance UVA penetration into the skin & to prevent dryness of the skin.
- With oral retinoids to reduce dryness & soreness of skin especially the lips, palms & soles.

4. **Senile pruritus:** it is worse in winter and night & is aggravated by bathing.

5. **Winter itch:** more in elderly with the very low humidity during very cold winters and central heating → cracking of fingers, chapping of hands.

6. **Handcreams:** e.g. housewife, nurse, cook, manual laborer or gardener or even office worker affected by chemical or mechanical insults.

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Adverse effects

1. Skin irritation.
2. Allergic contact dermatitis.
3. Cosmetic acne.
4. Sweat gland blockage "Sweat rash".